

椎管内皮样囊肿和表皮样囊肿破裂 的MRI诊断和鉴别诊断

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椎管内皮样囊肿和表皮样囊肿

- 来源于神经管闭合过程中残留的表皮组织（先天性）或植入的皮肤上皮（获得性）
- 先天性>>获得性
- 常伴发其他神经管闭合不全畸形
- 椎管内肿瘤的1%
- 良性、缓慢生长的肿瘤
- 多在20~40岁出现症状



■ 单发 >> 多发

■ 髓外硬膜内 (60%) > 脊髓内 (35%) > 硬膜外 (5%)

■ 腰骶段椎管常见(60%), 累及脊髓圆锥及马尾

■ 胸段及颈段椎管内少见

■ MRI > CT > X线脊髓造影 > X线平片



皮样囊肿和表皮样囊肿病理学差异

■ 皮样囊肿

- 中胚层和外胚层结构
- 囊壁：与皮肤相似的复层鳞状上皮
毛囊、毛发、汗腺和皮脂腺等皮肤附属器官

■ 表皮样囊肿

- 外胚层结构
- 有完整胶原组织囊壁
- 胶原组织囊壁的内面衬有复层鳞状上皮

内容物共性：胆固醇和甘油三酯

皮样囊肿和表皮样囊肿MRI表现

多样性， 肿瘤内多有脂质信号

■ T1WI: 高、等、低或混杂信号

■ T2WI: 高、等、低或混杂信号

■ FS序列: 脂质区呈低信号

■ DWI: 高信号

■ 增强扫描无强化

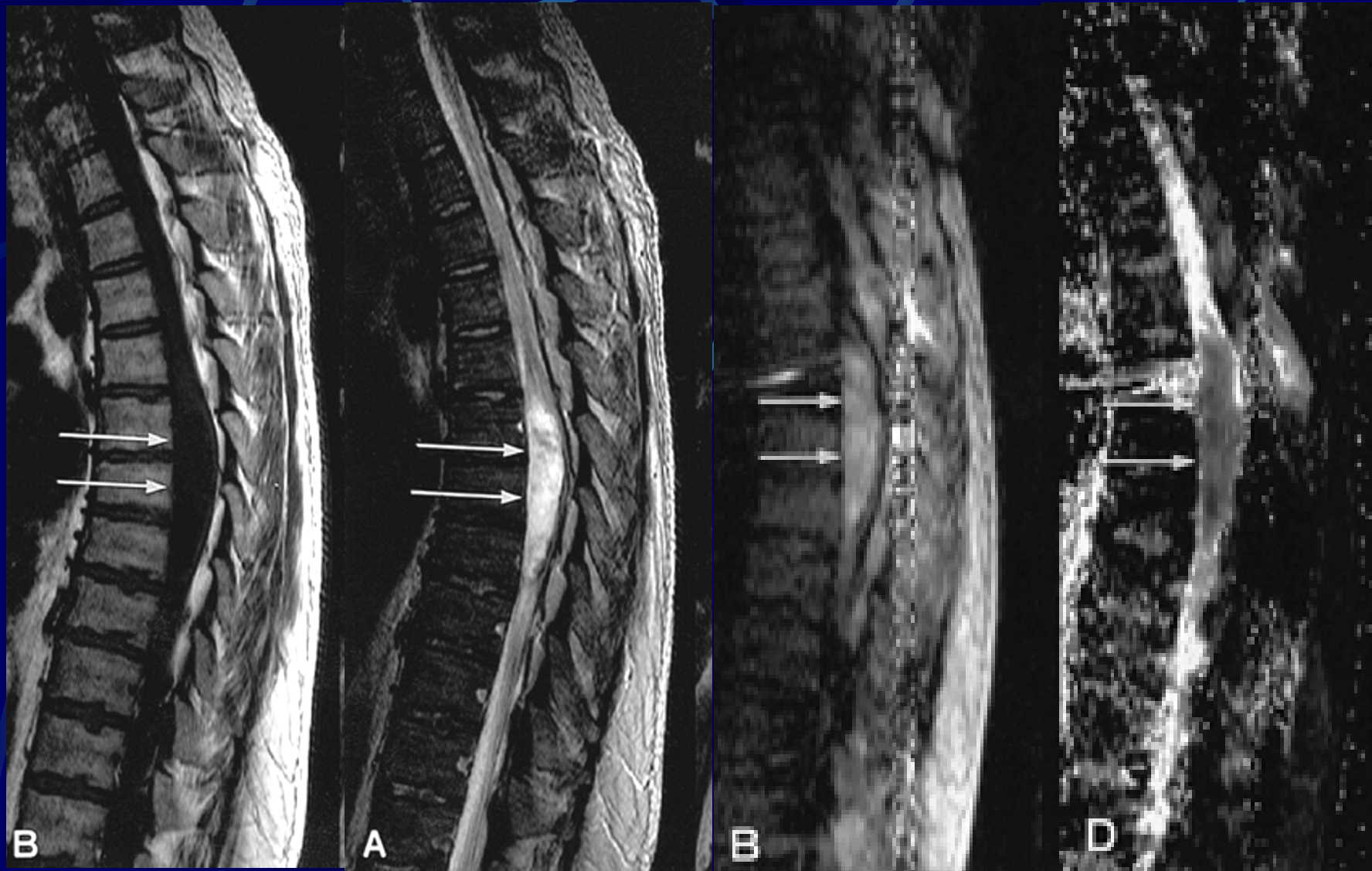


T₁WI

T₂WI

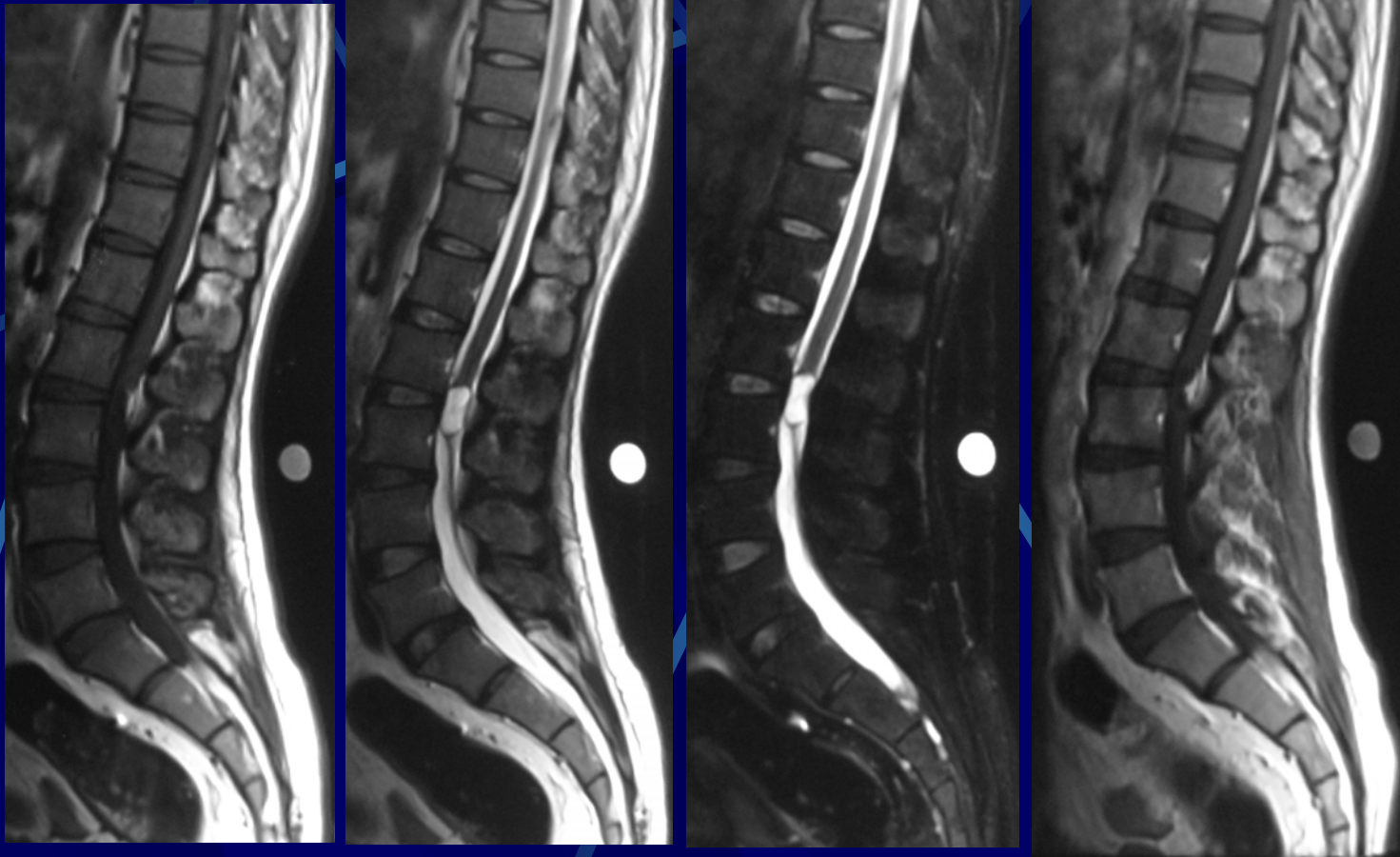
DWI

ADC图



epidermoid cyst

magnetic resonance imaging of the brain and spine, 2002, by Scott W. Atlas



T1WI

T2WI

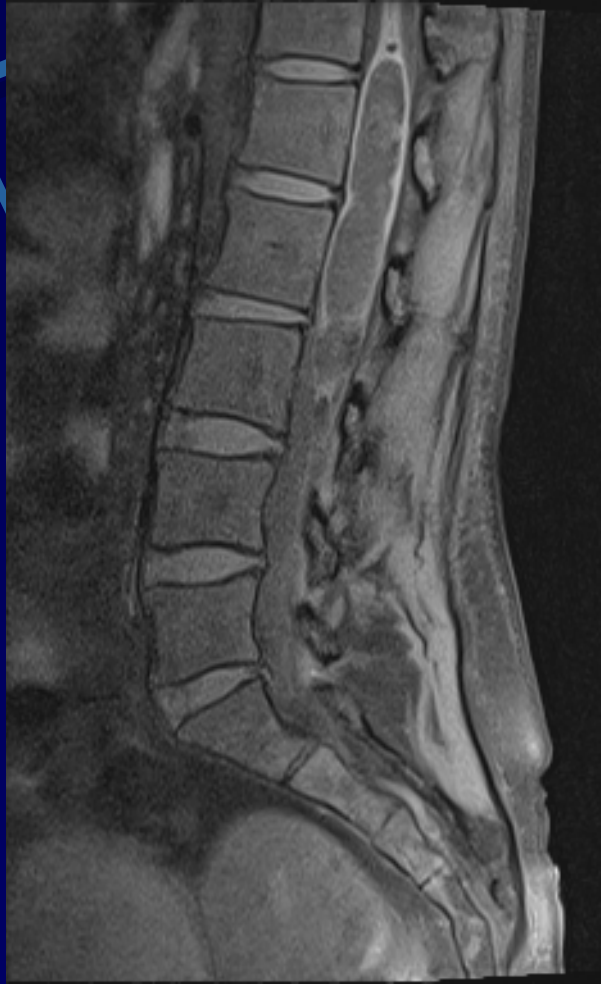
T2WI压脂

T1WI增强

M/35Y , 18461, epidermoid cyst



T1WI



T1WI压脂



T2WI

dermoid cyst

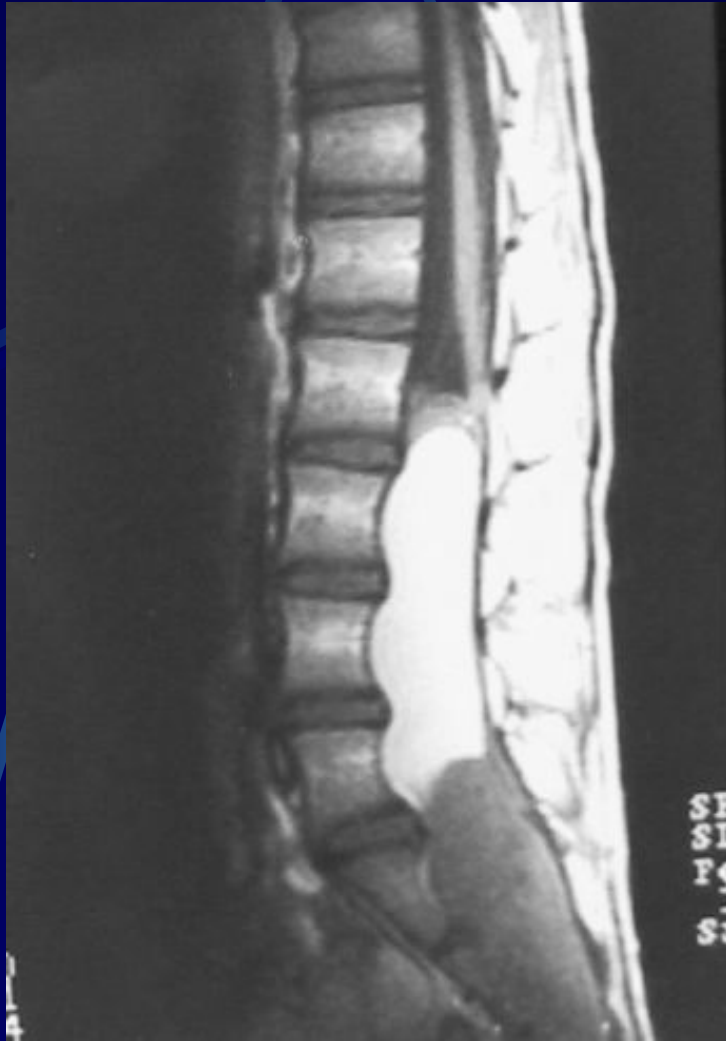


dermoid cyst





dermoid cyst



dermoid cyst



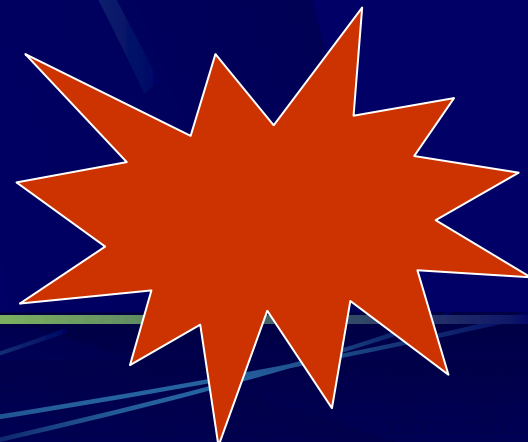
dermoid cyst



epidermoid cyst (multiple)

magnetic resonance imaging of the brain and spine
2002 by Scott W. Atlas

椎管内皮样囊肿与表皮样囊肿破裂



椎管内皮样囊肿和表皮样囊肿 破裂的诱因

■ 外伤

■ 腰椎穿刺

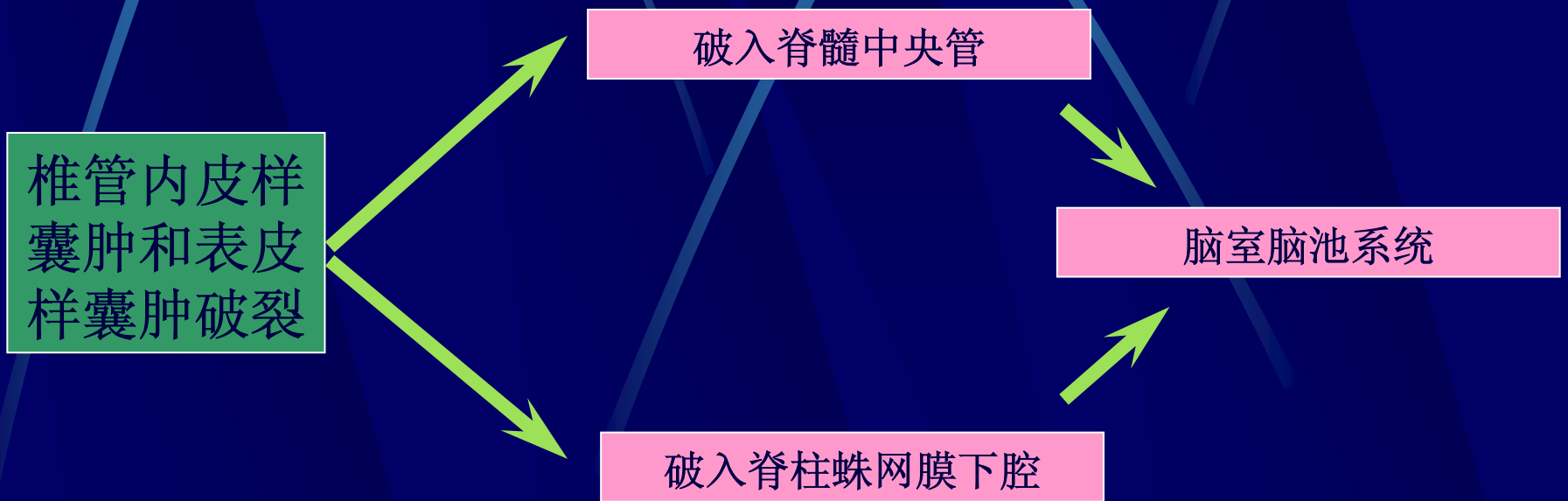
■ 外科手术

常见诱因

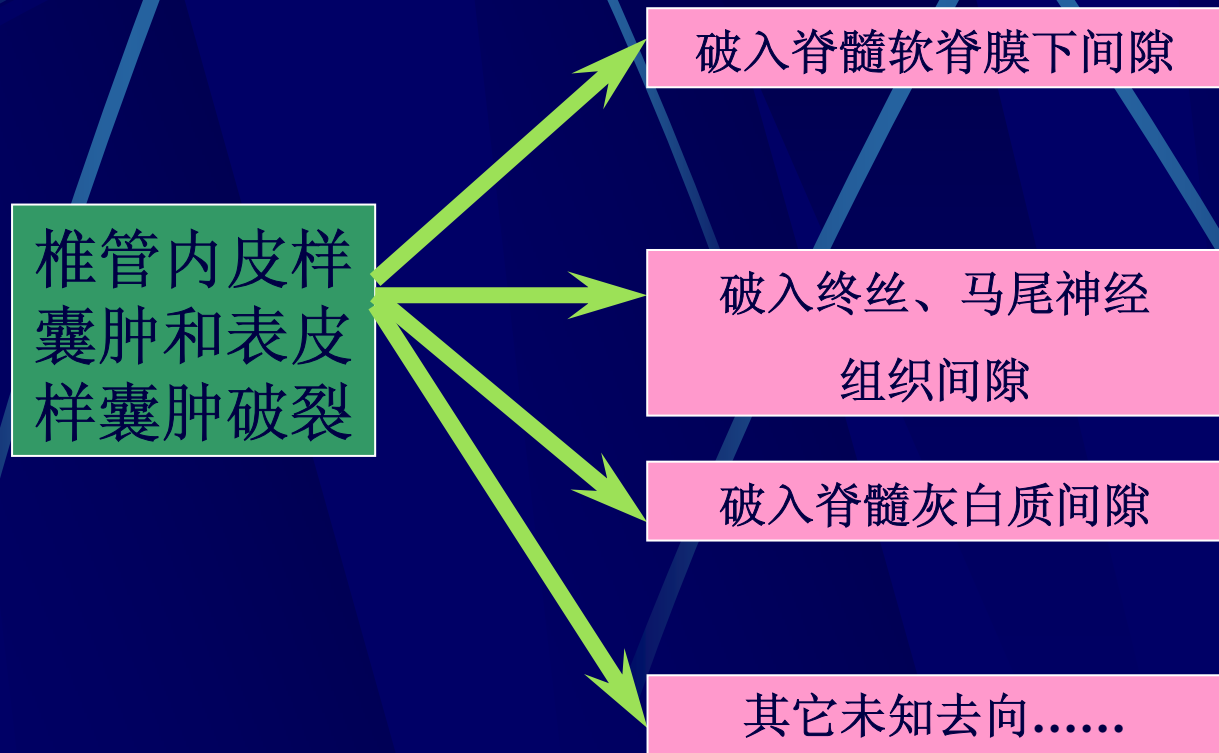
■ 自发破裂 (70~80%)



椎管内皮样囊肿和表皮样囊肿破裂 内容物的流向



椎管内皮样囊肿和表皮样囊肿破裂 内容物的其它可能去向



后 果

- 化学性脑脊膜炎
- 室管膜炎、蛛网膜炎
- 血管痉挛
- 脑脊液通路梗阻、脑积水
- 颅神经和脊神经纤维化

椎管内皮样囊肿和表皮样囊肿破裂临床表现

■ 进入颅内脑室、脑池系统

化学性脑膜炎或脑积水→头痛、癫痫、脑膜刺激征

脑血管痉挛→一过性脑缺血

可无症状

■ 进入椎管内蛛网膜下腔

无症状或出现非特异性症状

脊神经根刺激症状

■ 破裂入脊髓中央管

往往不引起症状

缺乏特征性



椎管内皮样囊肿和表皮样囊肿破裂 的影像学诊断依据

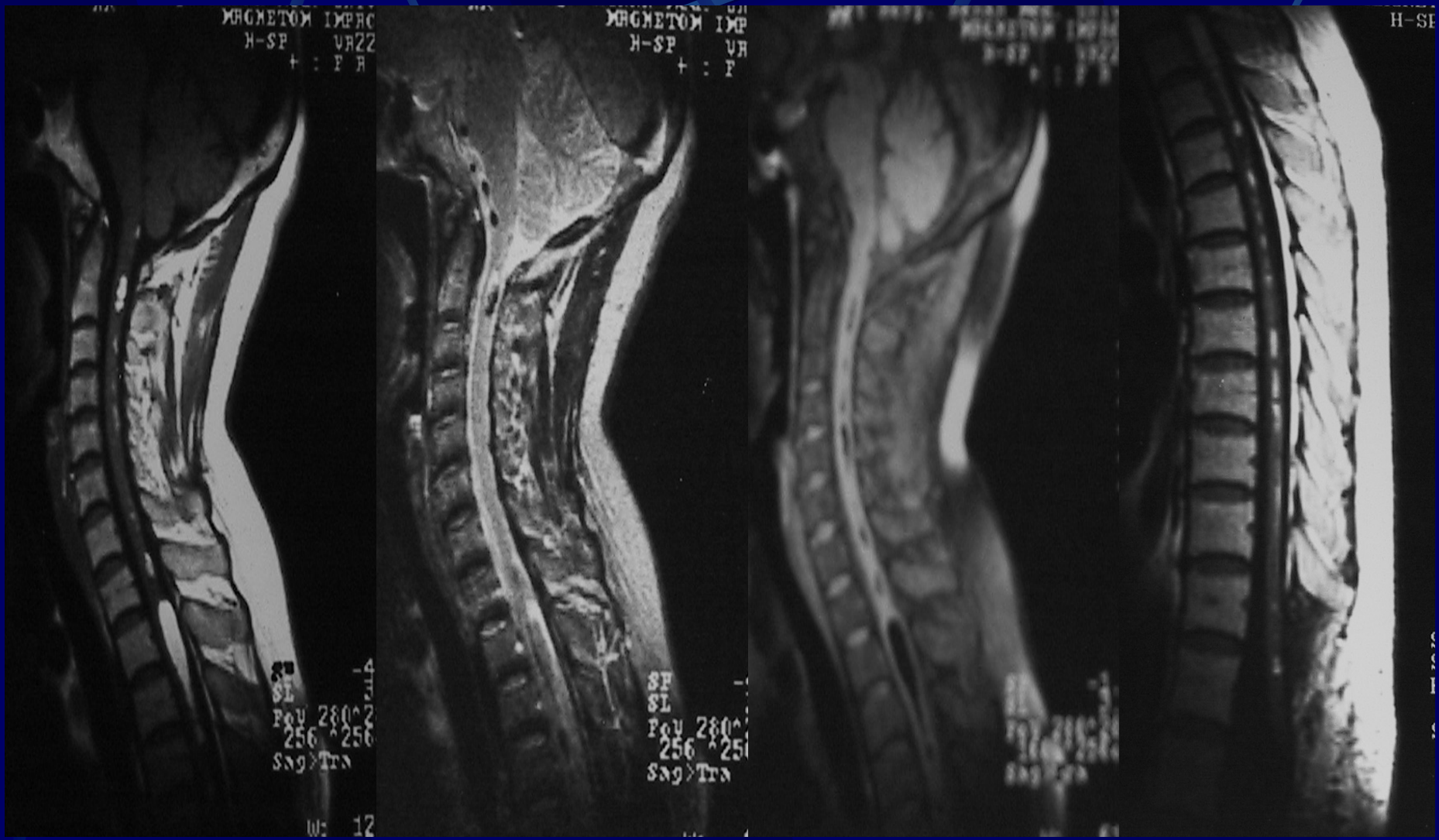
- 脑或脊柱蛛网膜下腔或脊髓中央管内发现脂滴
(首要条件, **MRI**和**CT**诊断的关键)
- 椎管内发现含有脂肪性物质的肿瘤
(皮样囊肿、表皮样囊肿、畸胎瘤)



脂滴的MRI表现

- **T1WI**: 脂肪性高信号
- **T2WI**: 略有衰减
- **FS序列**: 极低信号
- **FLAIR序列**: 高信号

MR各序列上脂滴与皮下脂肪的信号变化相仿



Rupture of dermoid cyst

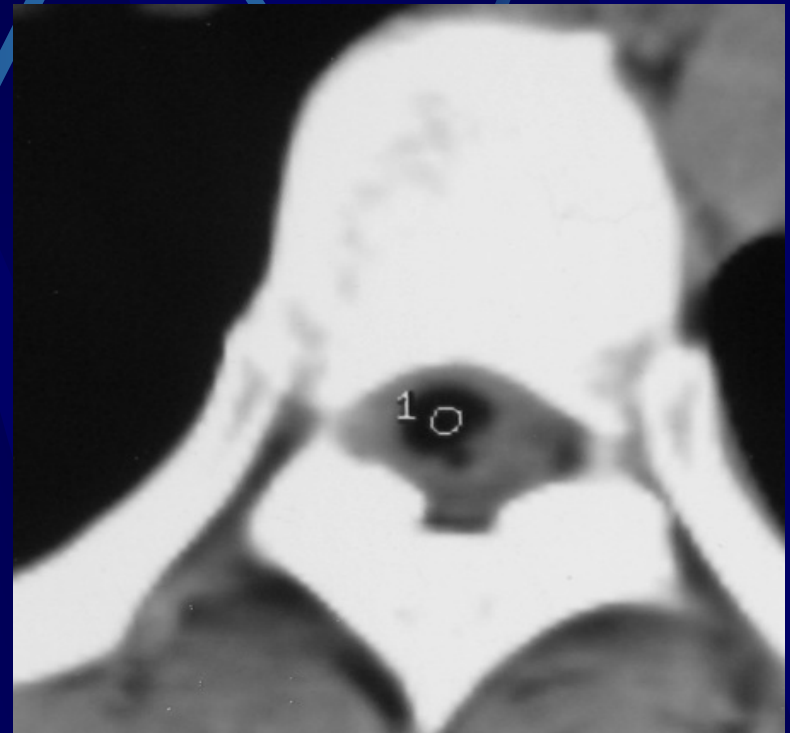
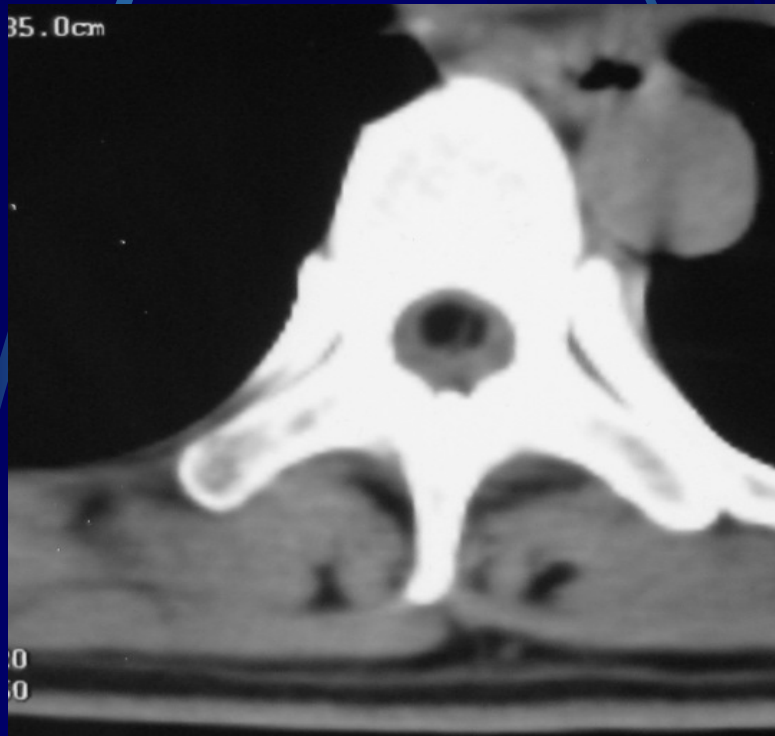


Rupture of dermoid cyst

脂滴CT表现：脂肪性低密度

CT值：-10 ~ -150Hu

小脂滴特别是蛛网膜下腔脂滴常在CT图像上漏诊



CT value : -120Hu

■ 1992年到2009年， 我院发现椎管内皮
样囊肿和表皮样囊肿破裂病例17例

破入脊髓中央管11例

破入脊柱蛛网膜下腔4例

同时破入脊髓中央管及脊柱蛛网
膜下腔3例

■ 脂滴进入颅内12例



一、破入脊髓中央管

脊髓中央管内发现脂滴

脊髓内发现含有脂性物质的肿瘤

破入脊髓中央管罕见

- 5例 **Neuroradiology**, 2000, 42(8):572-579
- 2例 **Australas Radiol**, 2003, 47(2):194-197
- 1例 **Br J Radiol**, 2006, 79(938): 167-169
- 1例 **Australas Radiol**, 2002, 46(4):444-446
- 1例 **J Neurosurg Sci**, 2004, 48(2):63-65
- 1例 **Diagn Interv Radiol.**, 2006, 12(4):171-173
- 1例 **J Neurooncol**, 2007, 84(1): 39-40
- 1例 **J Radiol**, 2005, 86(5 Pt 1): 498- 501
- 1例 **J Neurosurg Spine**, 2006, 5(2): 178

迄今全球报道总和仅为14例!

1992年到2009年，我院发现破入脊髓中央管11例

男7例，女4例

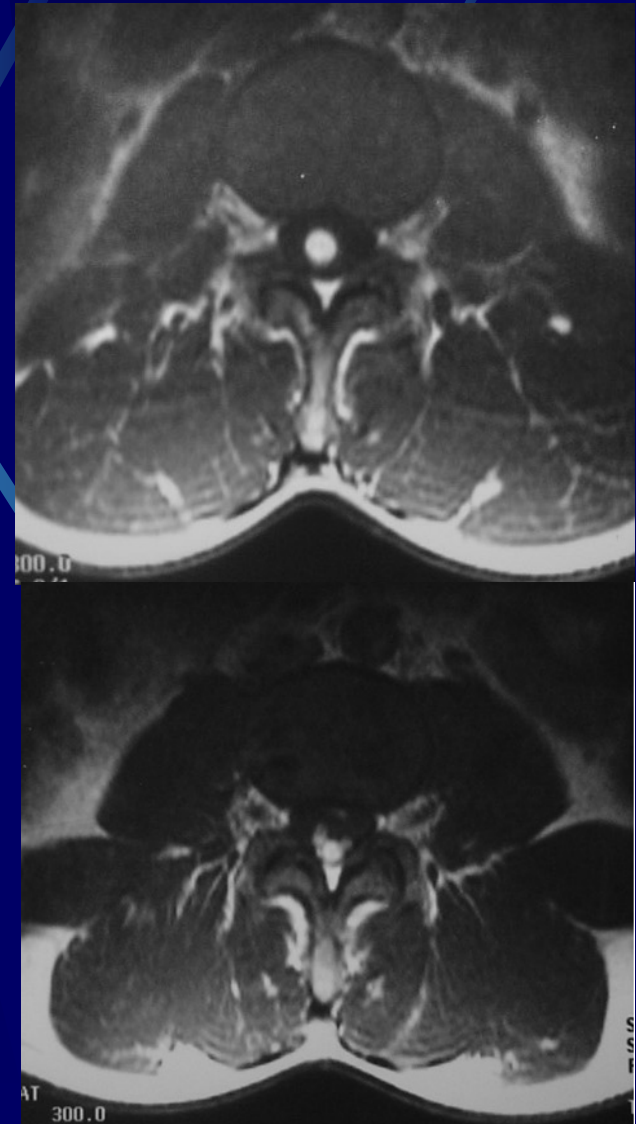
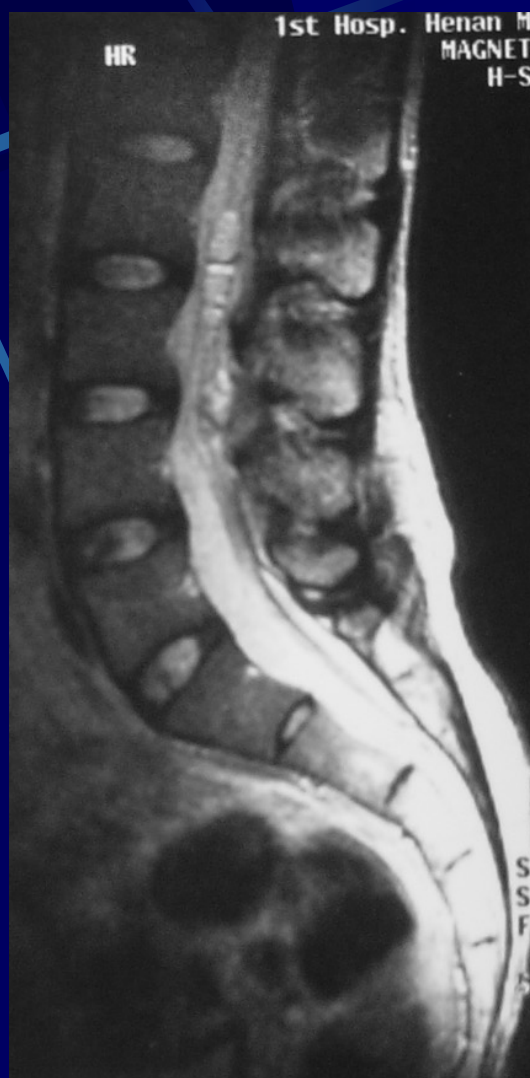
年龄21~56岁，平均35.2岁

所有患者原发灶均经手术病理证实为皮样囊肿

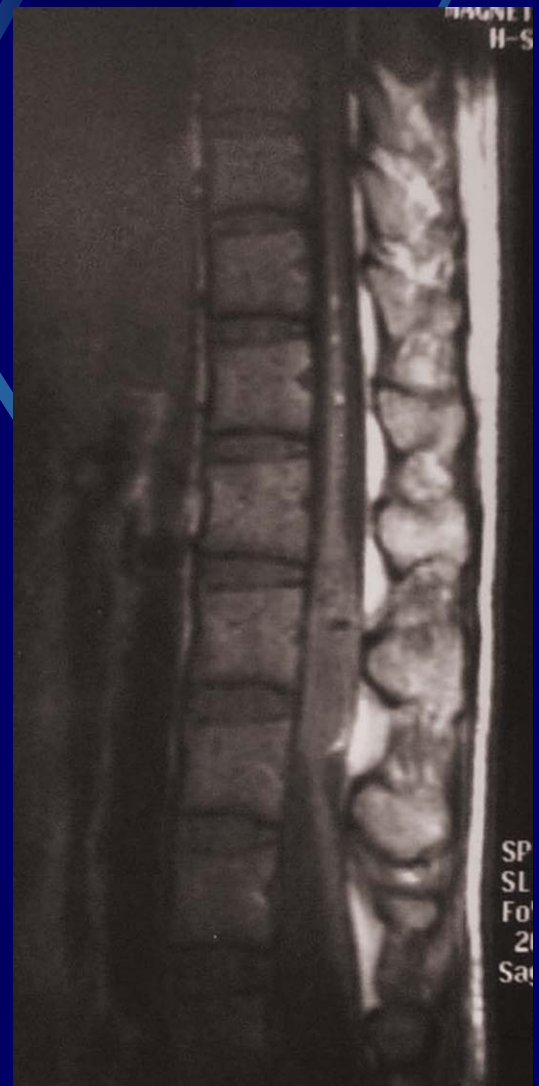
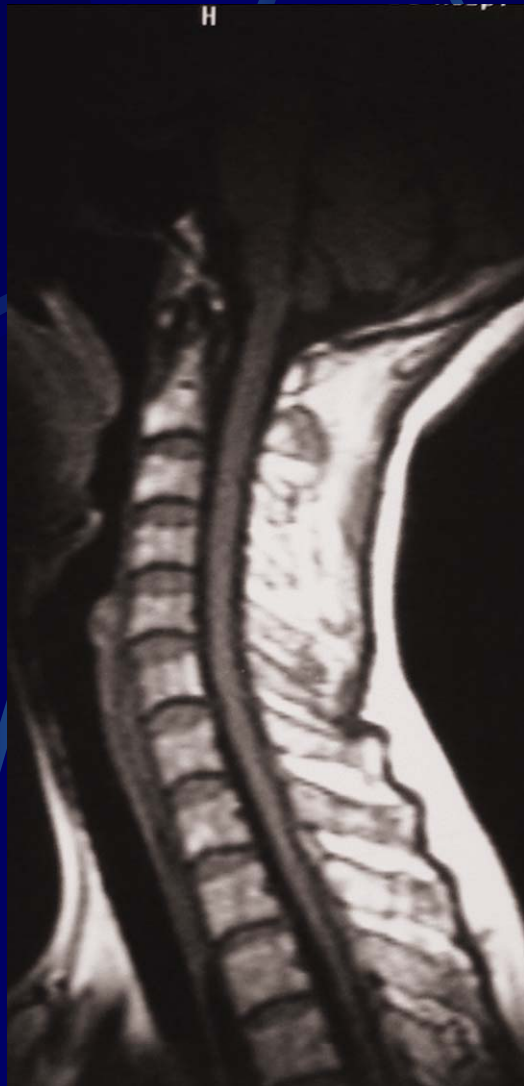
全部患者均未做过X线脊髓造影、CT脊髓造影、脑池、脑室造影检查，无开放性脊柱外伤

Table 1. MR results of ruptured spinal dermoid tumors with spread of fatty droplets

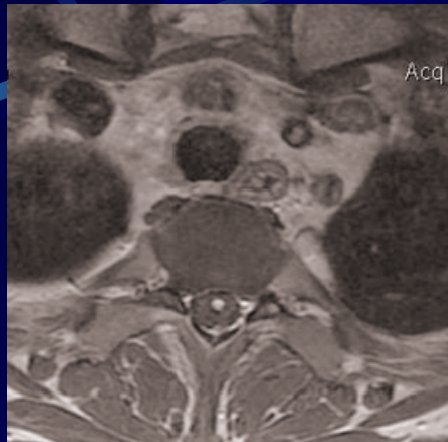
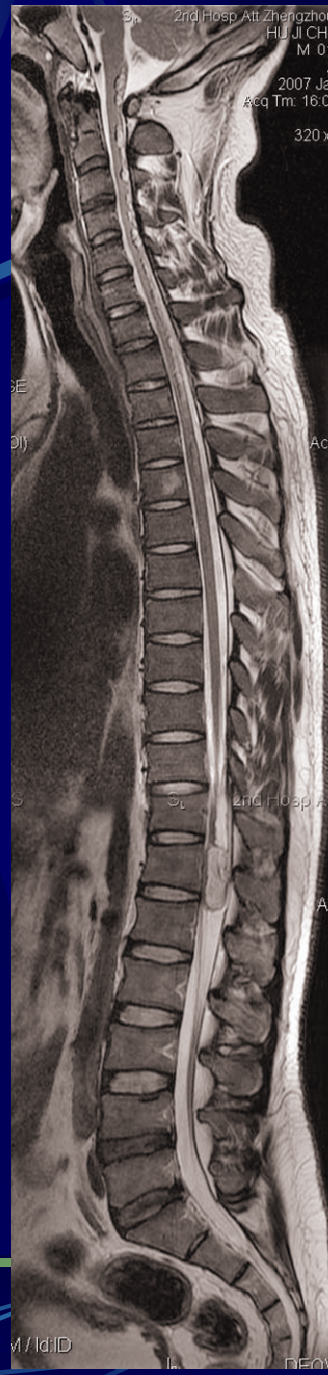
Case number	MR number	Patients gender	Patients age	MR-scanner type	Scanned segment
1	10801	F	40	Siemens Impact 1.0T	L
2	37422	M	22	Siemens Impact 1.0T	L
3	26211	M	37	Siemens Impact 1.0T	T+L
4	30482	M	56	Siemens Impact 1.0T	T+L
5	15118	M	24	GE Signa 1.5T	C+T+L
6	15217	F	50	Siemens Impact 1.0T	C+T+L
7	23104	F	42	Siemens Impact 1.0T	C+T+L
8	26252	M	30	Siemens Impact 1.0T	C+T+L
9	13961	M	21	Siemens Impact 1.0T	C+T+L
10	16008	F	30	Siemens Impact 1.0T	C+T+L
11	756	M	23	Siemens Trio Tim 3.0T	C+T+L



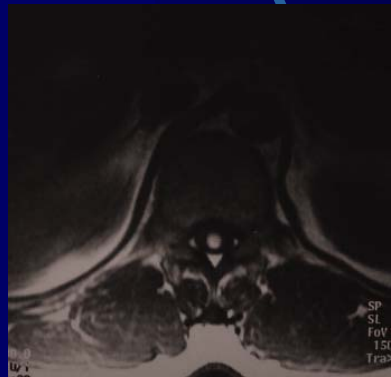
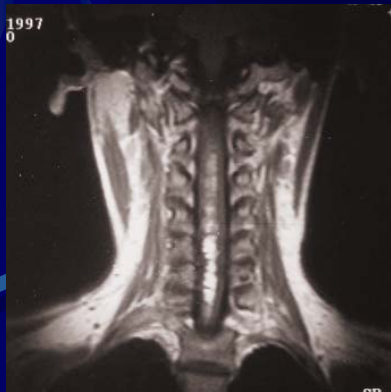
M/37,26211, ruptured into central canal



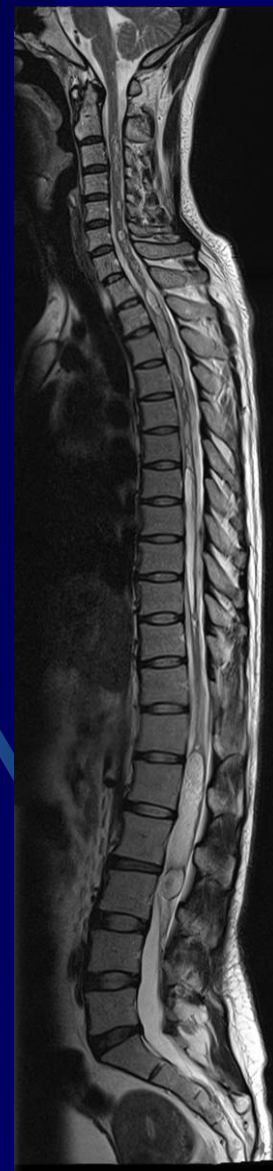
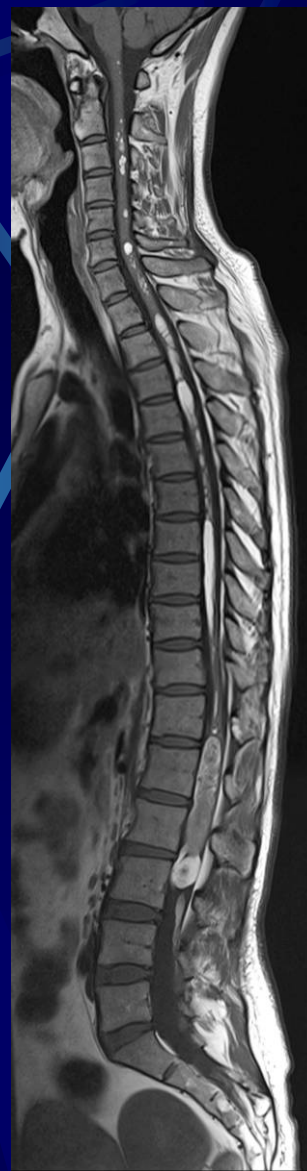
M/37Y , 30482, multiple lipid droplets in central canal



**F/24Y, 15118,
multiple lipid droplets
in whole central canal**



1999



2009

F/30Y , 16008 , lipid droplets in central canal

脂滴进入脊髓中央管的可能机制

- 中央管室管膜受压变薄出现裂隙
- 椎管内皮样囊肿和表皮样囊肿伴发脊髓空洞
- 皮样囊肿和表皮样囊肿切除术中，脊髓中央管受损



二、破入脊柱蛛网膜下腔

■ 1992年至2009年，我院发现椎管内皮样囊肿和表皮样囊肿破裂破入脊柱蛛网膜下腔4例

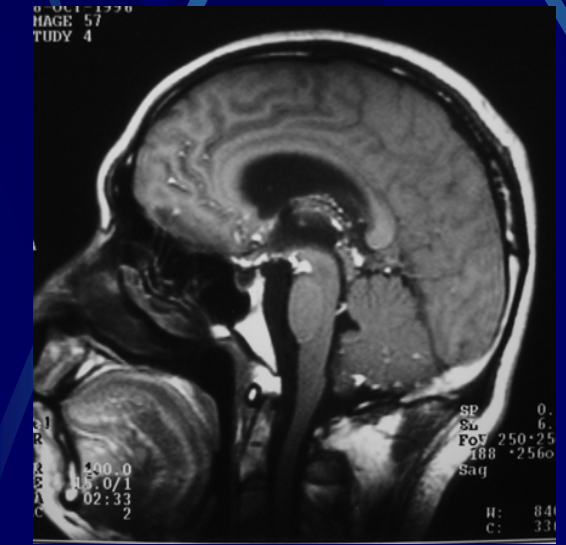
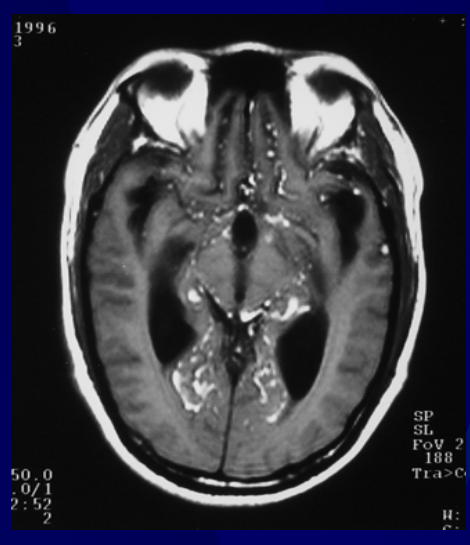
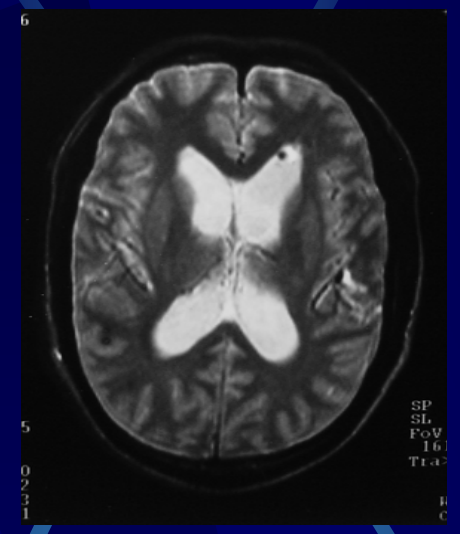
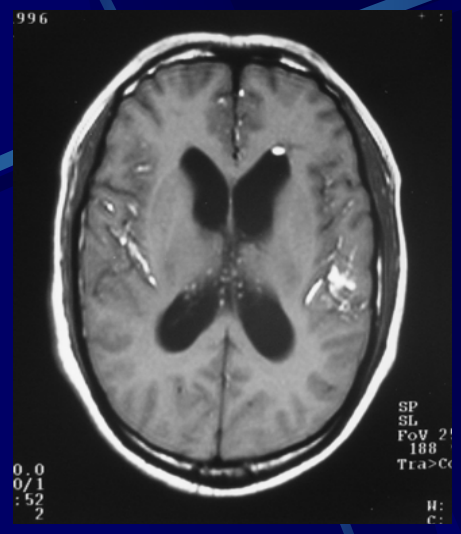
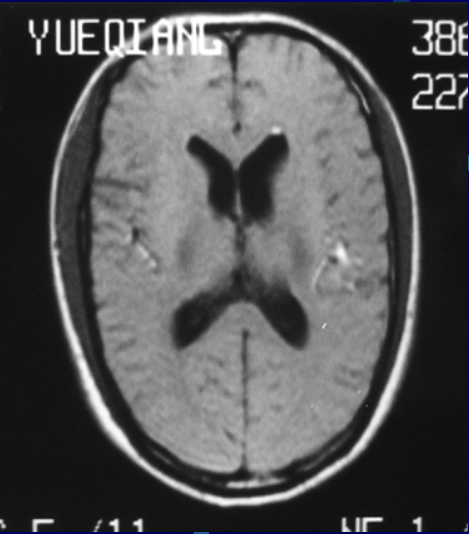
■ 结局：

脂滴上行进入颅内或滞留于脊柱蛛网膜下腔

■ 诊断：

脊柱蛛网膜下腔或颅内发现脂滴

髓外硬膜下或脊髓内皮样囊肿和表皮样囊肿



Rupture of dermoid cyst

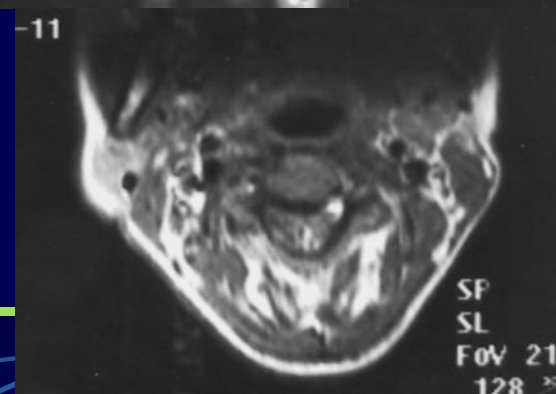
三、同时破入脊髓中央管及脊柱蛛网膜下腔

■ 罕见，1992年至2009年，我院发现3例

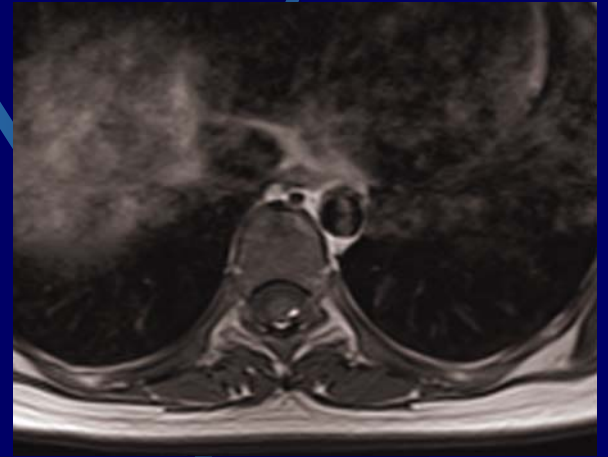
■ 诊断：

脊髓中央管和脊柱蛛网膜下腔或脑室、
脑池系统同时见到脂滴

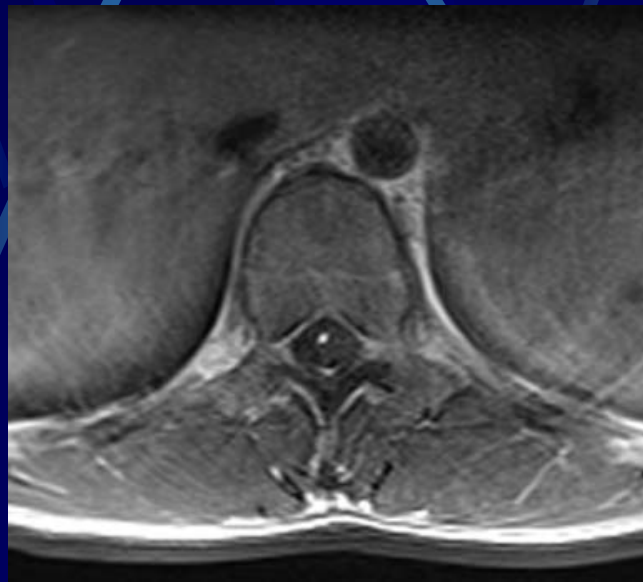
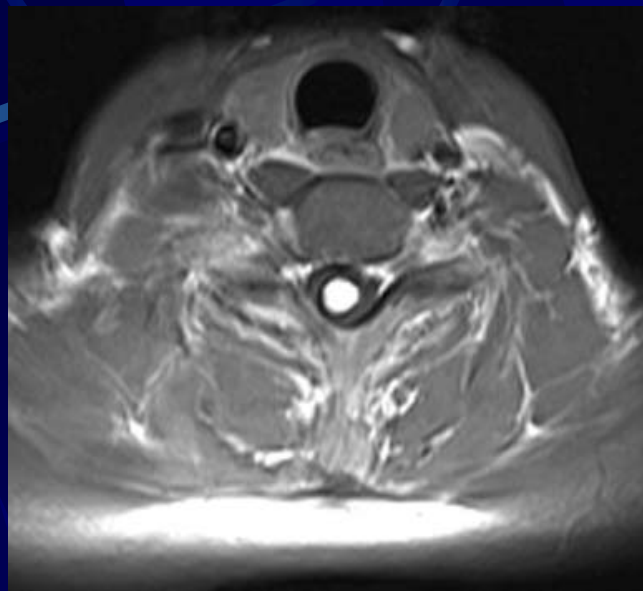
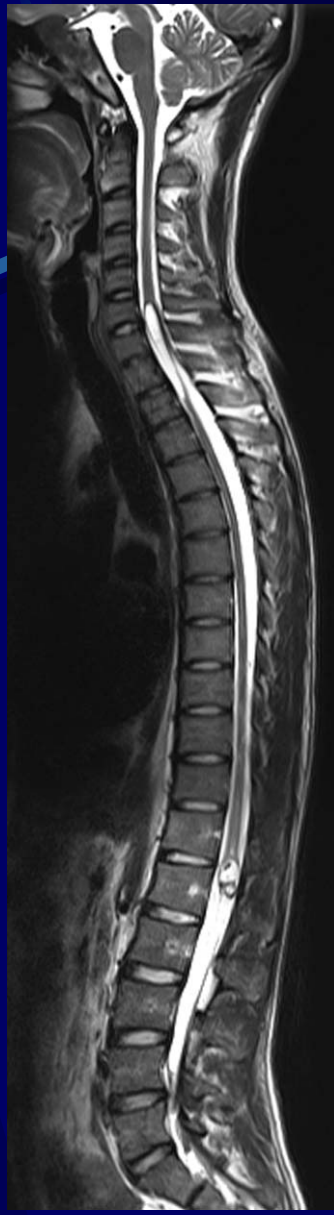
脊髓内型皮样囊肿或表皮样囊肿存在



Rupture of dermoid cyst



F/32Y, 6300, ruptured to subarachnoid space



M/23Y, 756, ruptured to central canal and subarachnoid space

椎管内脂滴的MRI鉴别诊断

1. 多发脂肪瘤

- 脊髓软脊膜下肿瘤，常偏于脊髓一侧
- 病理检查为成熟的脂肪组织
- 镜下可见大量脂肪细胞
- 其间有较多的毛细血管及多量的纤维结缔组织
- 缺乏椎管内皮样囊肿和表皮样囊肿

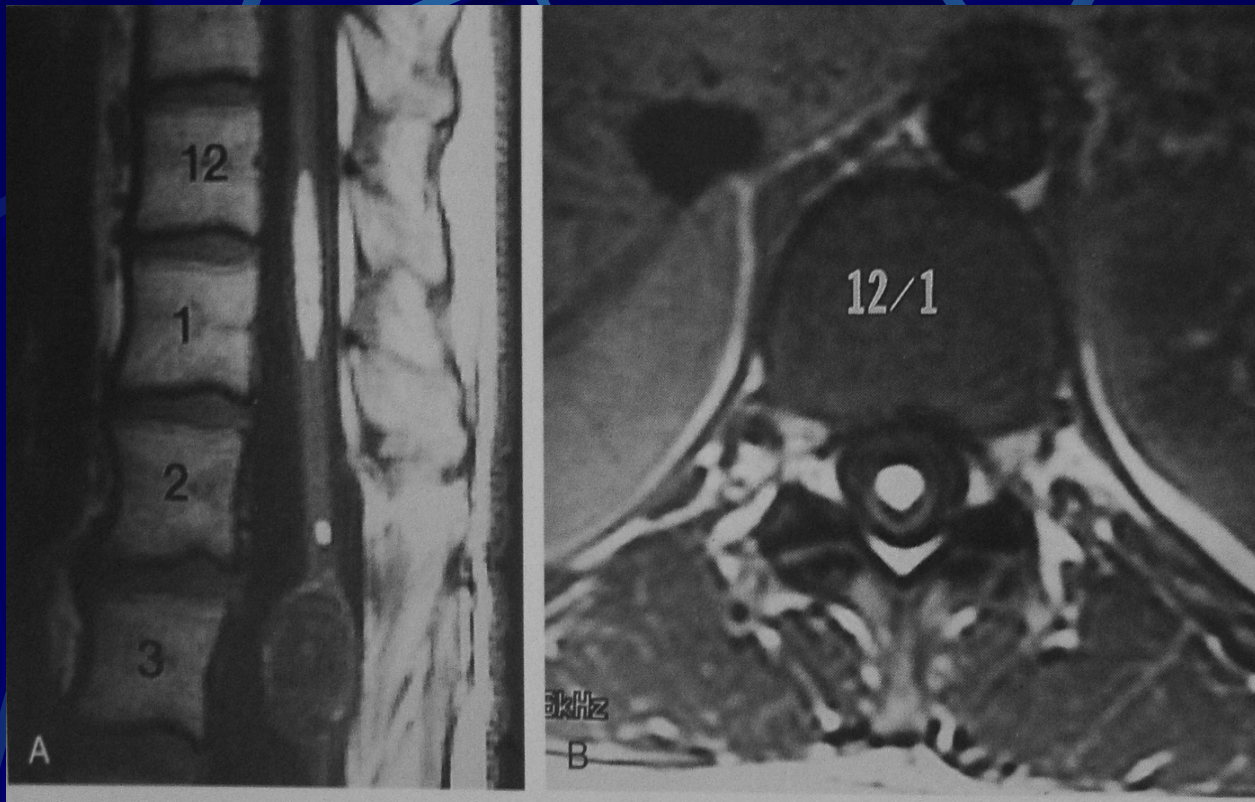


Figure 11-21. Lipoma and epidermoid. In this unusual case, (A) sagittal and (B) axial T1-weighted MRI show a purely intramedullary lipoma at T12-L1 and intact dorsal elements. A second small lipoma is present at lower L2. The mass in the conus at L3 is an epidermoid.

Rupture of dermoid cyst

■ 2. 亚急性期血肿

- T2WI和FS序列上仍呈高信号
- CT呈等、高密度或非脂肪性低密度
- 缺乏椎管内皮样囊肿和表皮样囊肿

3. 海绵状血管瘤

- 瘤巢中心游离正铁血红蛋白呈爆米花或桑椹状高信号
- 出血灶外围含铁血黄素沉着
- CT呈等高密度或等密度
- 缺乏椎管内皮样囊肿和表皮样囊肿

4. 黑色素瘤

- T1WI呈高信号
- T2WI上常常表现为低信号
- 脂肪抑制序列上仍呈高信号
- Gd-DTPA增强瘤灶明显强化
- CT呈等高密度
- 缺乏椎管内皮样囊肿和表皮样囊肿

■ 5. 滞留的碘油和碘苯酯油滴

- T1WI上为高信号、FS序列为低信号
- CT上碘油和碘苯酯油滴则呈极高密度，其周可见线束状伪迹
- 有碘油和碘苯酯脑室和椎管造影史
- 缺乏椎管内皮样囊肿和表皮样囊肿



T₂WI

T₁WI

X-ray myelography

脂滴进入脑室、脑池系统

■ 途径：脊柱蛛网膜下腔或/和脊髓中央管、四脑室出口

■ 特征性的影像表现

（脑室、脑池系统脂滴的存在）

■ **T1WI**：脂肪性高信号

■ **T2WI**：高信号略有衰减

■ **FS序列**：极低信号

MR各序列上与皮下脂肪的信号变化相仿

■ **CT**上脂滴呈脂肪性低密度

椎管内皮样囊肿和表皮样囊肿破裂脂滴 进入脑室、脑池系统的MRI诊断

- 脑室、脑池系统脂滴存在
- 蛛网膜下腔或脊髓中央管内发现脂滴
- 椎管内发现含有脂肪性物质的肿瘤
- 排除颅内含脂质肿瘤的存在与破裂
- 排除外源性油滴的进入

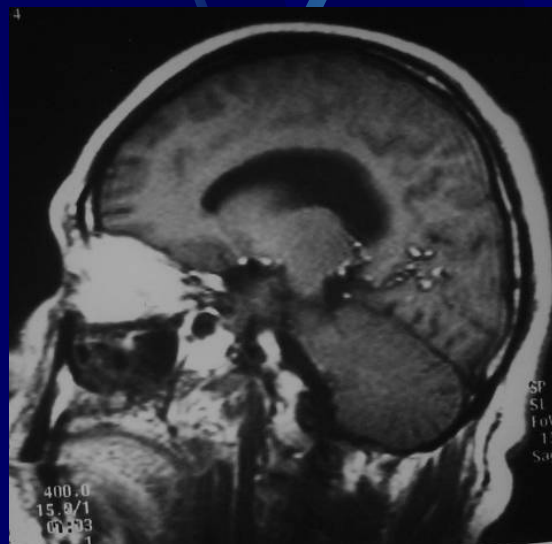
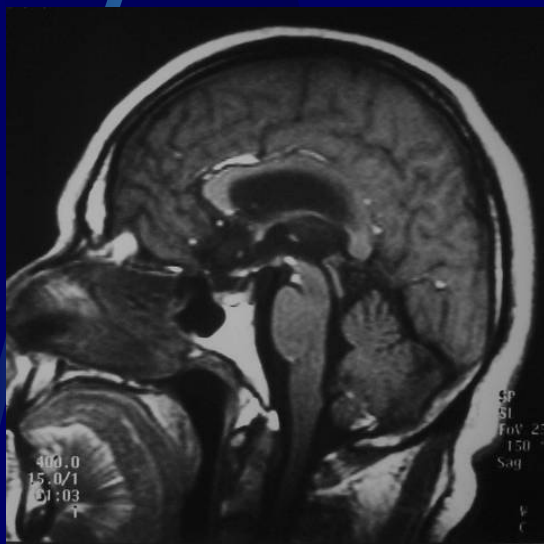
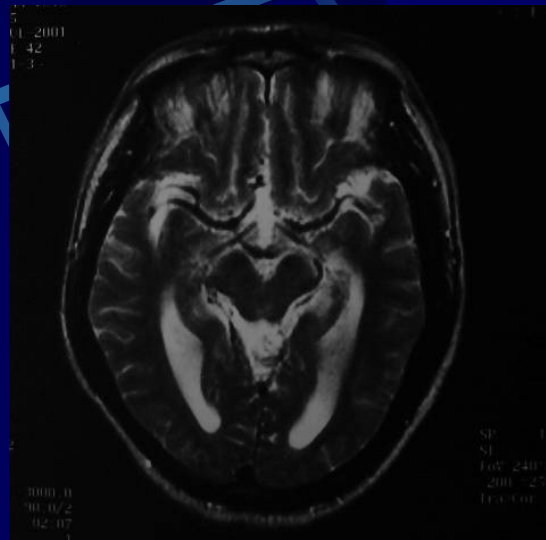
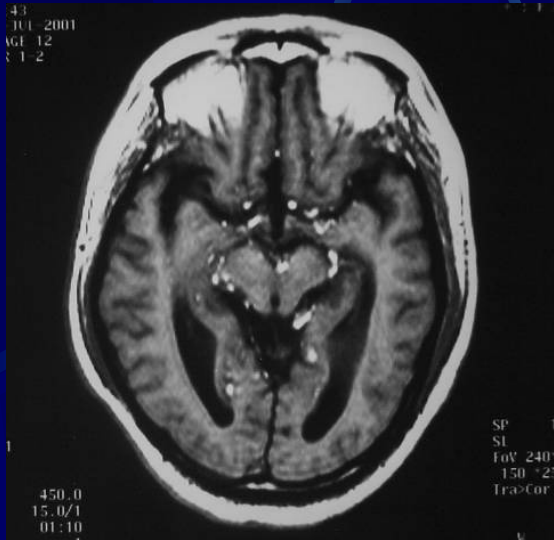
■脂滴常积聚在基底池、侧裂池、脑凸面脑沟和四脑室

■脑室内脂滴常随体位变化而移动

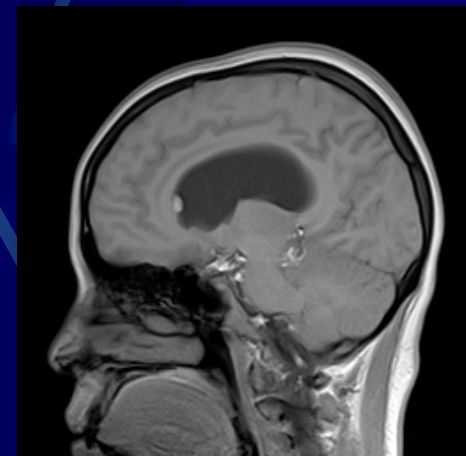
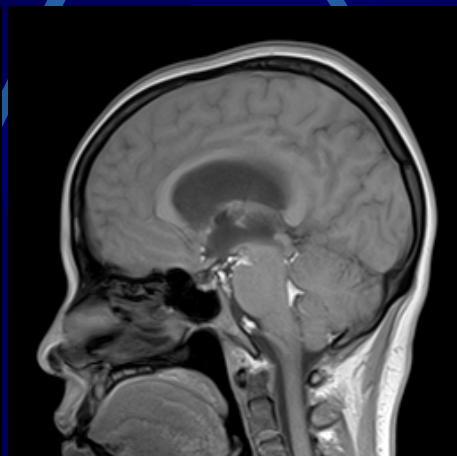
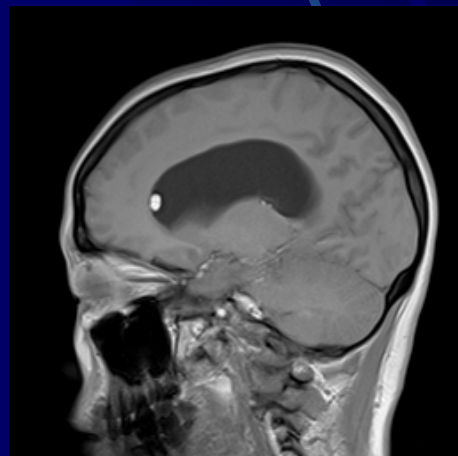
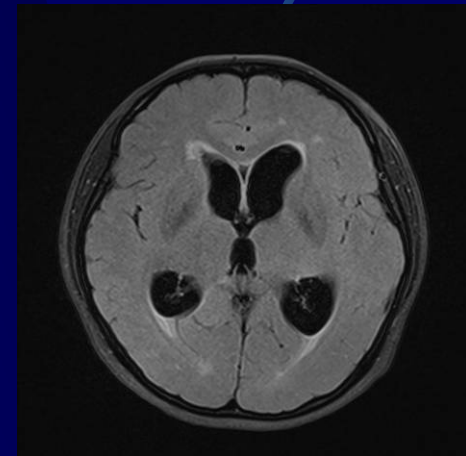
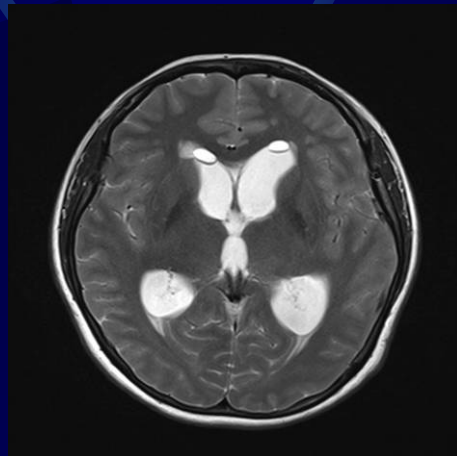
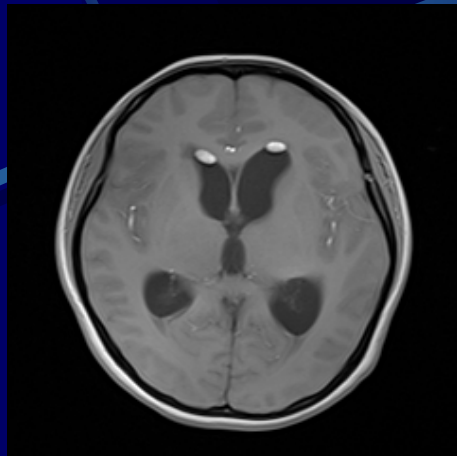
■脑沟和脑池内脂滴移动缓慢而困难

■脊髓中央管内脂滴移动困难

■脑沟和脑池内脂滴吸收困难，可长期存留达数10年



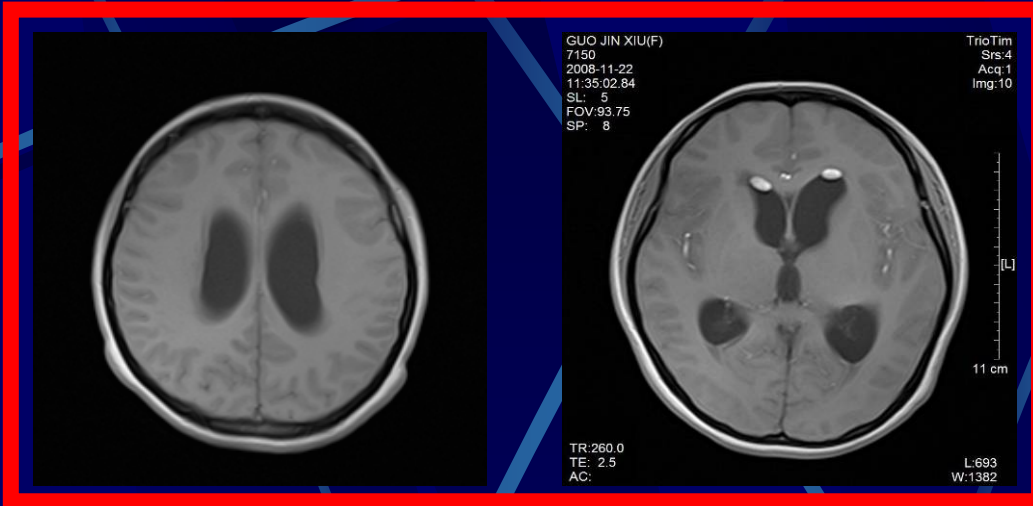
M/56, 30482 Rupture of dermoid cyst



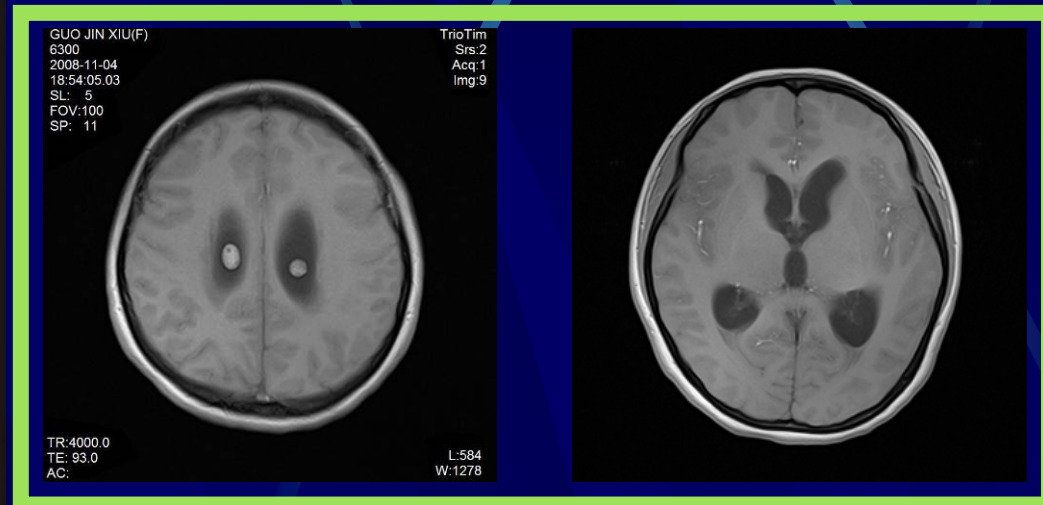
F/32, 6300

Rupture of dermoid cyst

有趣的现象



11:35
AM

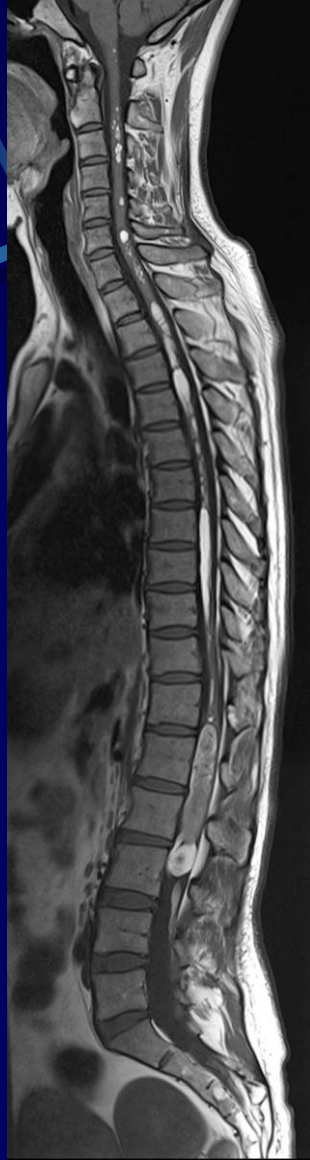


18:54
PM

F/32, 6300 Rupture of dermoid cyst



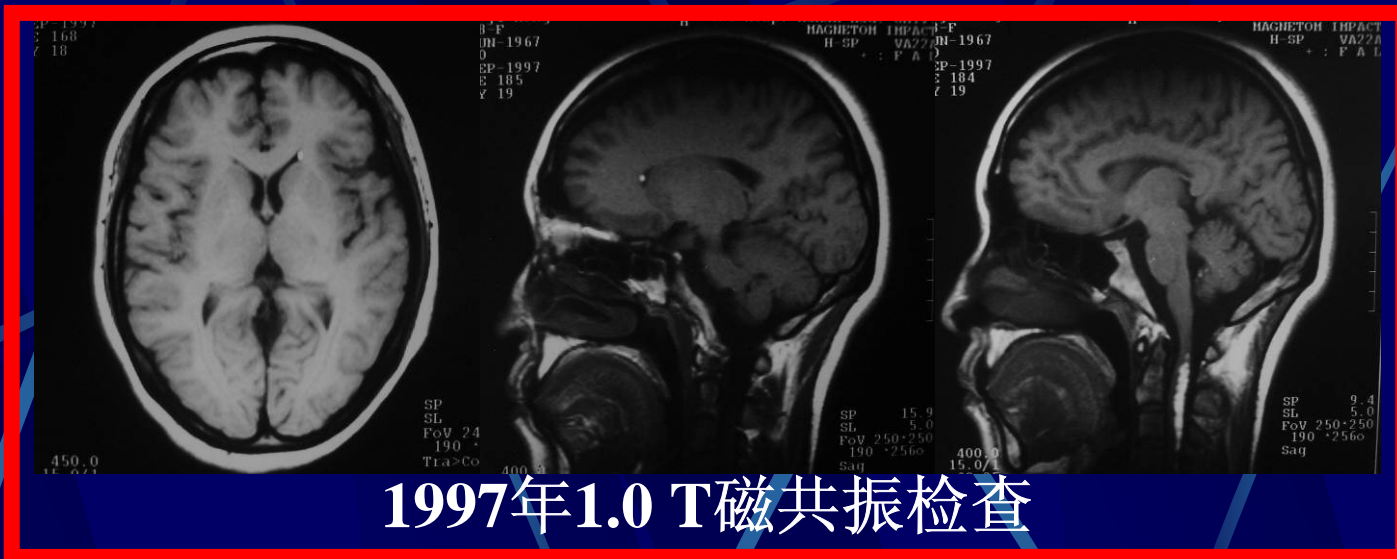
1999



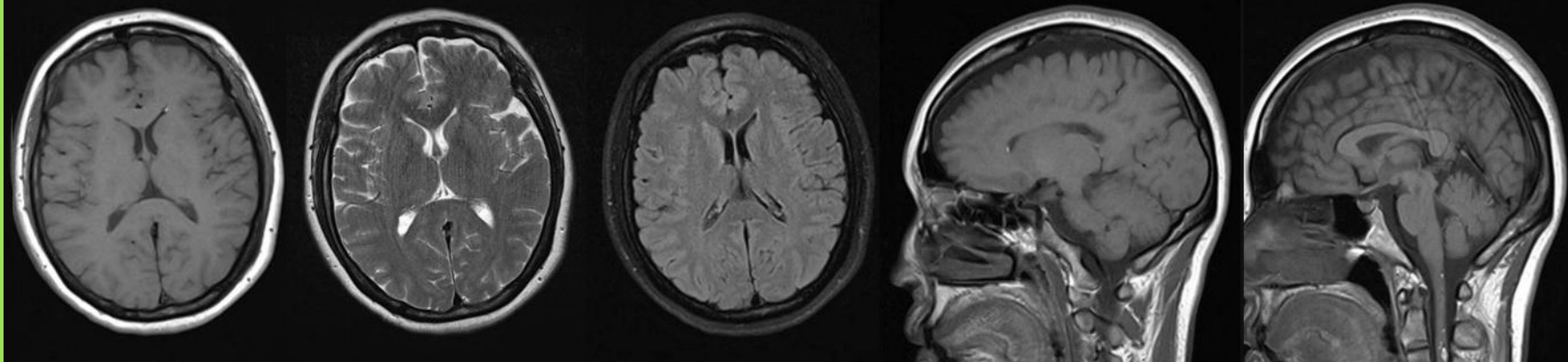
2009



F/30Y , 16008 , lipid droplets in central canal



1997年1.0 T磁共振检查



女1, 16008, 2009年3.0 T磁共振检查

脂滴吸收困难

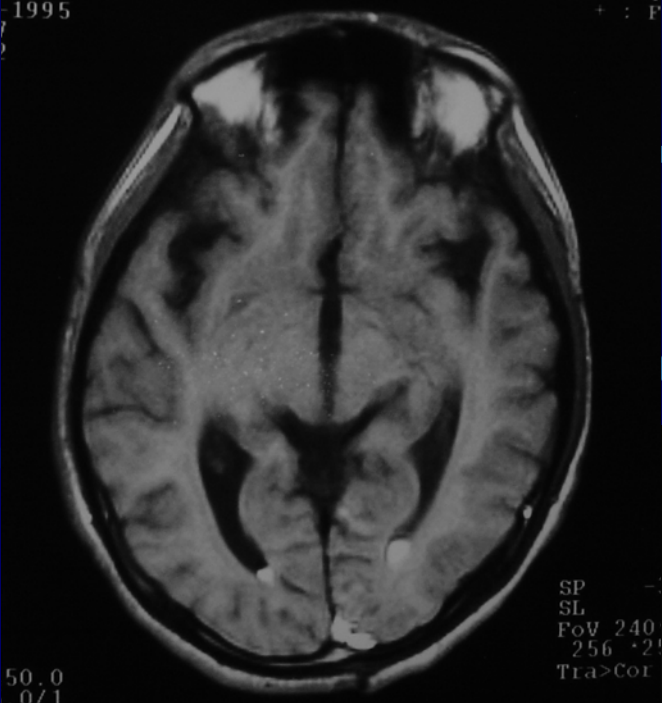
脑室、脑池系统脂滴的鉴别诊断

- 碘油或苯酯对比剂滞留
- 亚急性期或慢性期血块
- 多发脂肪瘤和含脂性肿瘤



1995

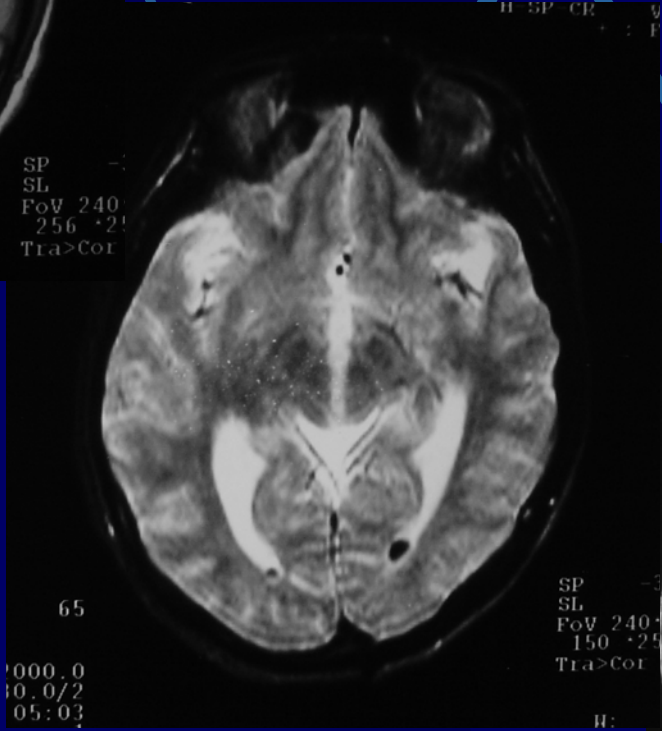
H-SP-CR
+ : F



50.0
0/1

SP
SL
FoV 240
256 *2
Tra>Cor

H-SP-CR
+ : F



65

000.0
10.0/2
05:03

SP
SL
FoV 240
150 *25
Tra>Cor

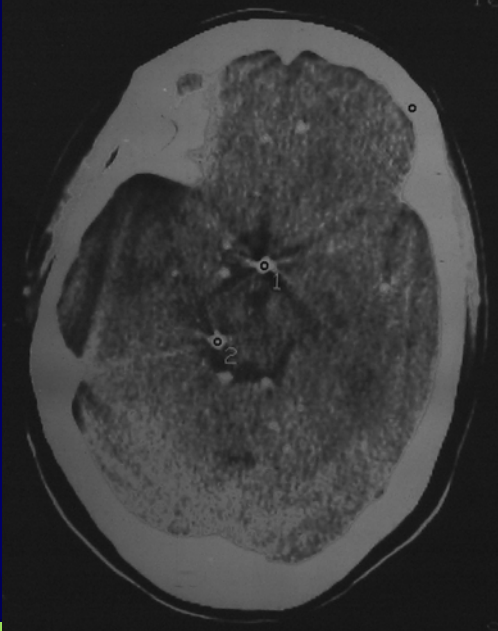
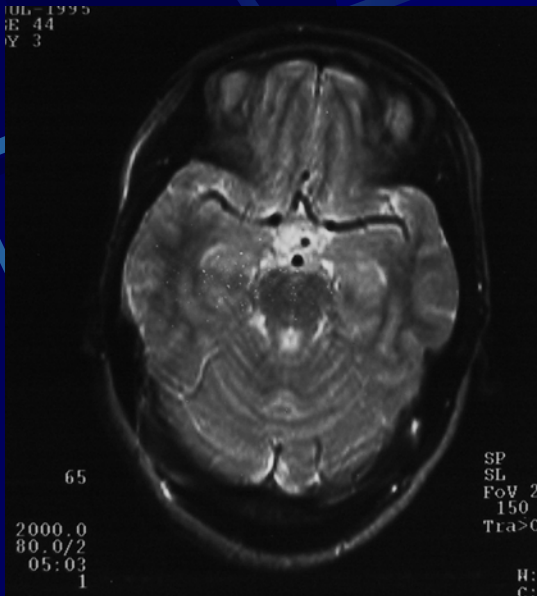
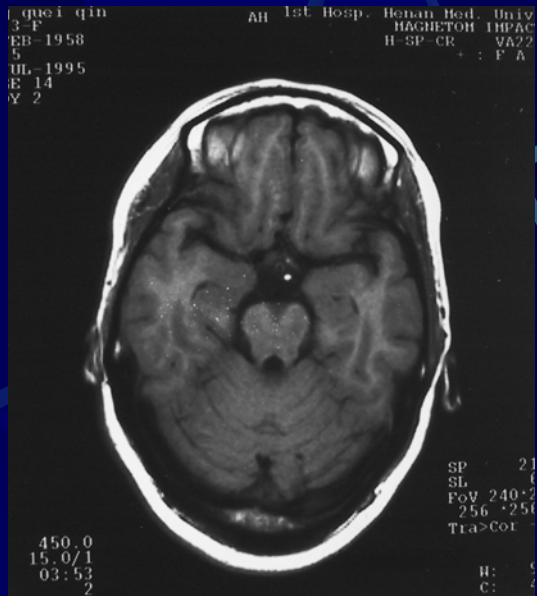
H:

300M

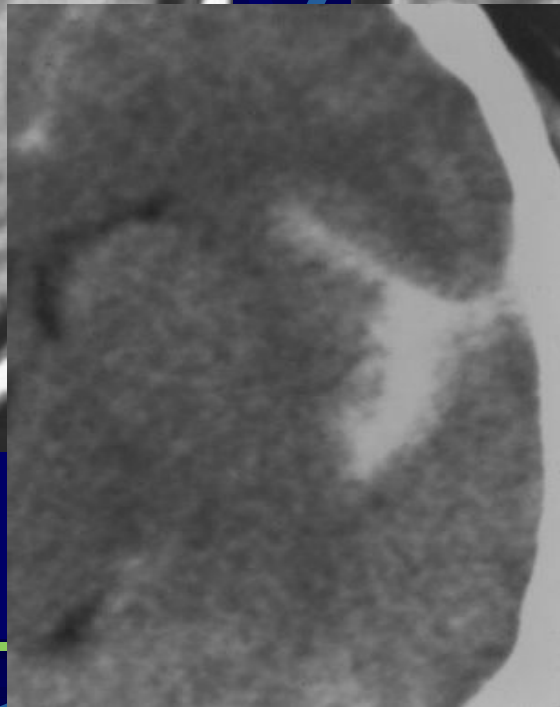
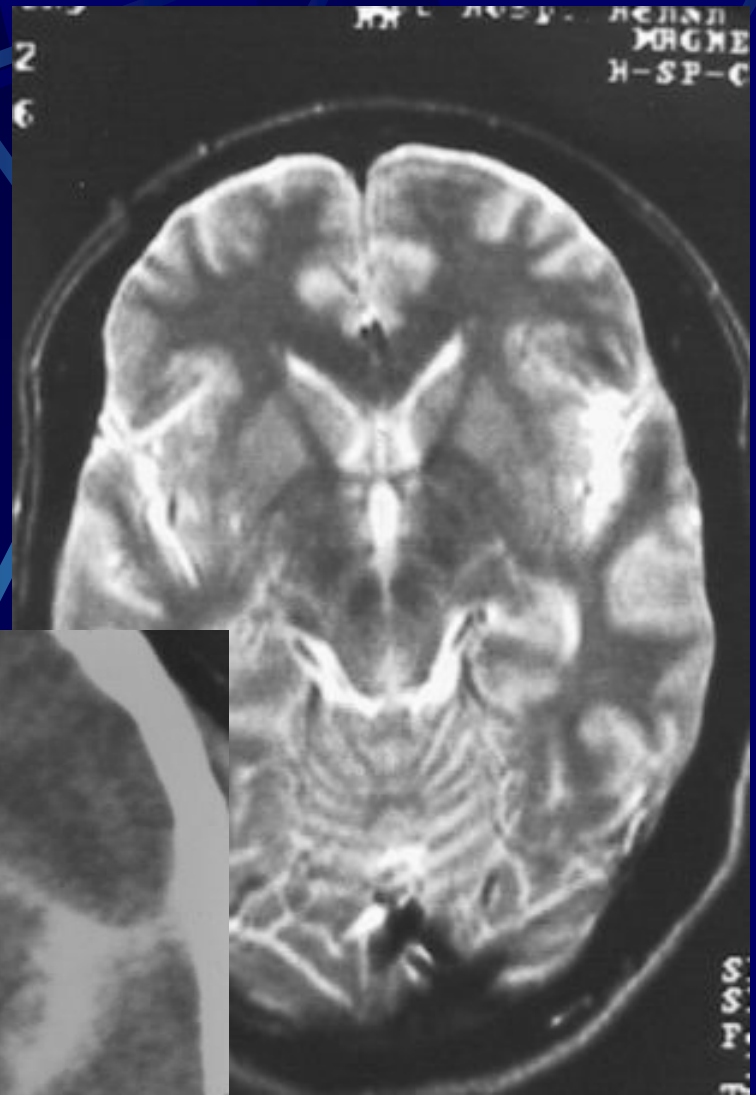
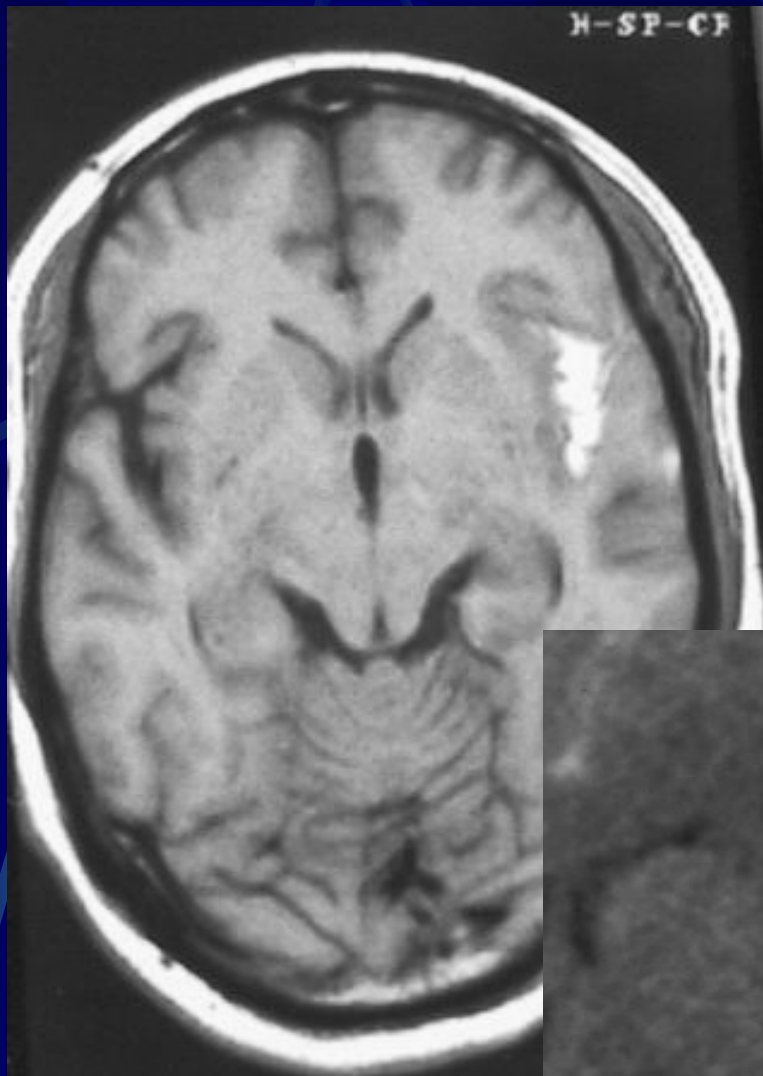


SU
HFC

iophendylate



iophendylate





谢谢!